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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,900	04/30/2007	Ralph Wirtz	2004P56021US	6097

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EXAMINER	
DAVIS, MINH TAM B	
ART UNIT	**PAPER NUMBER**
1642	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/576,900	WIRTZ ET AL.	
	Examiner	Art Unit	
	MINH-TAM DAVIS	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 March 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5,7 and 10* is/are pending in the application.

4a) Of the above claim(s) *1-3,5 and 10* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/9/09;11/14/07;11/9/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's election with traverse of group F, claim 7 in the reply filed on 3/9/09 is acknowledged. Applicant cancels claims 4, 6, 8-9 and adds new claim 10.

The traversal is on the ground(s) as follows:

In the present application, the special technical feature is the diagnosis of neoplasia, prediction of response to cancer treatment, and a kit which include the combination of markers comprising SEQ ID NOs: 361, 363, 379 and 392 as claimed in claims 1, 7 and 10. Thus, all of the claims of the present application should be searched together. In addition, all of the dependent claims should be searched with the independent claims. If the independent claims satisfy the requirements of unity of invention, no problem with lack of unity arises from the dependent claims. (PCT Rule 13.4) In fact, it does not matter if the dependent claim itself contains a further invention. (Id.). Thus, the further election of species as set out in the restriction requirement should be withdrawn.

This is not found persuasive because of the following reasons:

The special technical feature of the claimed invention is a combination of the nucleic acids of SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379 and SEQ ID NO:392 as claimed in claim 10. Claims 1-3, 5 are the first use of a combination of the nucleic acids of SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379 and SEQ ID NO:392. Claim 7 is an additional use of a combination of the nucleic acids of SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379 and SEQ ID NO:392. The invention of claim 7 is distinct from the invention of claims 1-3, 5 and 10, because if multiple products, processes of manufacture or uses are claimed, the first invention of

the category first mentioned in the claims of the application will be considered as the main invention in the claims, see PCT article 17(3) (a) and 1.476 (c), 37 C.F.R. 1.475(b) and (d). After that, all other products and methods will be broken out as separate groups (see 37 CFR 1.475(d).)

The requirement is still deemed proper and is therefore made FINAL.

In a conversation with Karla Weyand on 3/30/09, Applicant elects with traverse the combination of the nucleic acids of SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379 and SEQ ID NO:392 and breast cancer. It is noted that breast cancer is not a species, but is a distinct invention.

Accordingly, group F, claim 7, a method for diagnosis of breast cancer, using the combination of the nucleic acids of SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379 and SEQ ID NO:392.

The embodiment of claim 7, as drawn to a method for diagnosis of cancer, using the combination of polypeptides encoded by SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379 and SEQ ID NO:392 has been withdrawn from consideration as being drawn to non-elected invention. The embodiment of claim 7, as drawn to a method for diagnosis of a cancer other than breast cancer, using the polynucleotides of SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379 and SEQ ID NO:392 has been withdrawn from consideration as being drawn to non-elected invention. Further, claims 1-3, 5, 10 have been withdrawn from consideration as being drawn to non-elected invention.

Objection

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Claim Rejections - 35 USC § 112, Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. Claims 7 is indefinite because it recites "stringent hybridization conditions". Stringent conditions are not defined by the claim (which reads on the full range of stringent conditions, that is from very permissive to very high stringency), the specification does not provide a standard for ascertaining the requisite degree of stringent conditions and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention and would not be able to determine the metes and bounds of the claims.

2. Claim 7 is indefinite for reciting Table 2 or 3. MPEP 2173.05(s) teaches that "Where possible, claims are to be complete in themselves. Incorporation by reference to a specific figure or table "is permitted only in exceptional circumstances where there is no practical way to define the invention in words and where it is more concise to incorporate by reference than duplicating a drawing or table into the claim. Incorporation by reference is a necessity doctrine, not for applicant's convenience." Ex parte Fressola, 27 USPQ2d 1608, 1609 (Bd. Pat. App. & Inter. 1993)"

Claim Rejections - 35 USC § 112, First Paragraph, Written Description

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification discloses that SEQ ID NO: 361, SEQ ID NO: 363 and SEQ ID NO: 379 encode SEQ ID NO: 439, SEQ ID NO: 441, and SEQ ID NO: 457, respectively, all of which are component of intermediate filament network (p.141, 148-149). The specification discloses that SEQ ID NO:392 encodes SEQ ID NO: 470, which is a dehydrogenase, GAPDH (p.142, 150).

It is noted that "generation of the genetic code" is not the same as "degeneration of the genetic code".

The specification and the art do not disclose structure of polynucleotide analogs of SEQ ID NO: 361, SEQ ID NO: 363 and SEQ ID NO: 379, which analogs encode proteins that have the same function of the corresponding proteins encoded by SEQ ID NO: 361, SEQ ID NO: 363 and SEQ ID NO: 379. The structure of the claimed polynucleotide analogs, however, are unpredictable, in view of the unpredictability of protein chemistry, such unpredictability applies as well to the encoding polynucleotides. Protein chemistry is probably one of the most unpredictable areas of biotechnology. Bowie (Science, 1990, 257:1306-1310) teaches that an amino acid sequence encodes a message that determines the shape and function of a protein and

that it is the ability of these proteins to fold into unique three-dimensional structures that allows them to function and carry out the instructions of the genome and further teaches that the problem of predicting protein structure from sequence data and in turn utilizing predicted structural determinations to ascertain functional aspects of the protein is extremely complex. (col 1, p. 1306). Bowie further teaches that while it is known that many amino acid substitutions are possible in any given protein, the position within the protein's sequence where such amino acid substitutions can be made with a reasonable expectation of maintaining function are limited. Certain positions in the sequence are critical to the three dimensional structure/function relationship and these regions can tolerate only conservative substitutions or no substitutions (col 2, p. 1306). The sensitivity of proteins to alterations of even a single amino acid in a sequence are exemplified by Burgess et al (J of Cell Bio. 111:2129-2138, 1990) who teach that replacement of a single lysine reside at position 118 of acidic fibroblast growth factor by glutamic acid led to the substantial loss of heparin binding, receptor binding and biological activity of the protein and by Lazar et al (Molecular and Cellular Biology, 1988, 8:1247-1252) who teach that in transforming growth factor alpha, replacement of aspartic acid at position 47 with alanine or asparagine did not affect biological activity while replacement with serine or glutamic acid sharply reduced the biological activity of the mitogen. These references demonstrate that even a single amino acid substitution will often dramatically affect the biological activity and characteristics of a protein.

Although drawn to DNA arts, the findings in University of California v. Eli Lilly and Co., 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997) and Enzo Biochem, Inc. V. Gen-Probe Inc. are relevant to the instant claims. The Federal Circuit addressed the application of the

written description requirement to DNA-related inventions in University of California v. Eli Lilly and Co., 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1997). The court stated that "[a] written description of an invention involving a chemical genus, like a description of a chemical species, requires a precise definition, such as by structure, formula, [or] chemical name, of the claimed subject matter sufficient to distinguish it from other materials." Id. At 1567, 43 USPQ2d at 1405. The court also stated that

> a generic statement such as "vertebrate insulin cDNA" or "mammalian insulin cDNA" without more, is not an adequate written description of the genus because it does not distinguish the genus from others, except by function. It does not specifically define any of the genes that fall within its definition. It does not define any structural features commonly possessed by members of the genus that distinguish them from others. One skilled in the art therefore cannot, as one can do with a fully described genus, visualize or recognize the identity of the members of the genus. A definition by function, as we have previously indicated, does not suffice to define the genus because it is only an indication of what the gene does, rather than what it is. Id. At 1568, 43 USPQ2d at 1406. The court concluded that "naming a type of material generally known to exist, in the absence of knowledge as to what that material consists of, is not a description of that material." Id.

Finally, the court addressed the manner by which a genus of cDNAs might be described. "A description of a genus of cDNAs may be achieved by means of a recitation of a representative number of cDNAs, defined by nucleotide sequence, falling within the scope of the genus or of a recitation of structural features common to the members of the genus, which features constitute a substantial portion of the genus." Id.

The Federal Circuit has recently clarified that a DNA molecule can be adequately described without disclosing its complete structure. See Enzo Biochem, Inc. V. Gen-Probe Inc., 296 F.3d 1316, 63 USPQ2d 1609 (Fed. Cir. 2002). The Enzo court adopted the standard that the written description requirement can be met by "show[ing] that an invention is complete by

disclosure of sufficiently detailed, relevant identifying characteristics ....i.e., complete or partial structure, other physical and/or chemical properties, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of such characteristics." Id. At 1324, 63 USPQ2d at 1613 (emphasis omitted, bracketed material in original).

The inventions at issue in Lilly and Enzo were DNA constructs per se, the holdings of those cases are also applicable to claims such as those at issue here. A disclosure that does not adequately describe a product itself logically cannot adequately describe a method of using that product.

In this case, the specification does not describe the polynucleotide analog in a manner that satisfies either the standards as shown in the example of Lilly or Enzo. The specification does not provide sufficient structure or common structure, other than SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379, and SEQ ID NO: 392 to support the broad breath of the claimed genus. Nor is there any functional characteristics coupled with a known or disclosed correlation between structure and function. Although the specification discloses SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379, and SEQ ID NO: 392, this does not provide a description of the polynucleotide analog that would satisfy the standard as shown in the example of Enzo.

The specification also fails to describe the polynucleotide analog, by the standards shown in the example in Lilly. The specification describes only SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379 and SEQ ID NO: 392. Therefore, it necessarily fails to describe a "representative number" of such species. In addition, the specification also does not describe

"structural features common to the members of the genus, which features constitute a substantial portion of the genus."

The specification does not provide an adequate written description of the polynucleotide analog that is required to practice the claimed invention. Thus, the specification does not meet the 112, first paragraph written description requirement, and one of skill in the art would reasonably conclude that Applicant did not have possession of the claimed polynucleotide analog at the time the invention was made. Since the specification fails to adequately describe the product for use in the claimed method, it also fails to adequately describe the claimed method.

Claim Rejections - 35 USC § 112, First Paragraph, Enablement

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

To comply with the enablement requirement of 35 U.S.C. § 112, first paragraph, the specification must enable one skilled in the art to make and use the claimed invention without undue experimentation. The claims are evaluated for enablement based on the Wands analysis. Many of the factors regarding undue experimentation have been summarized in *In re Wands*, 858 F.2d 731,8 USPQ2d 1400 (Fed.Circ.1988) as follows: (1) the nature of the invention, (2)

the state of the prior art, (3) the predictability or lack thereof in the art, (4) the amount of direction or guidance present, (5) the presence or absence of working examples, (6) the quantity of experimentation necessary, (7) the relative skill of those in the art, and (8) the breadth of the claims.

The specification discloses that differentially expressed cancer genes could be screened by methods known in the art (p.54, 110).

The specification, however, does not have any data or objective evidence that the polynucleotides of SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379 and SEQ ID NO: 392 are differentially expressed in breast cancer tissue as compared to non-cancerous breast tissue, such that they can used for diagnosis of breast cancer.

1. Claim 7 is rejected under 112, first paragraph, for lack of enablement for **a method for detecting breast cancer.**

In the absence of objective evidence, one cannot determine whether SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379 and SEQ ID NO: 392 are differentially expressed in breast cancer tissues as compared to non-cancerous breast control tissues, because the level of expression of a polynucleotide in cancer tissue is not predictable. It is well known in the art that not every gene in a cancer cell is affected in carcinogenesis, such as mutation or changes in expression as compared to normal control cells. For example, Stanton, P et al, 1994, Br J Cancer, 70: 427-433 teach that the level of expression of epidermal growth factor receptor (EGFR) cannot be predicted from cell lines or tumors (p.432, second column, last paragraph), and that from ten tumors from which the cell lines are derived, only two of the tumors display elevated levels of EGFR, BICR6 and BICR18 proteins (table V on page 430, and first column, last

paragraph of page 430) In other words, not only the level EGFR, BICR6 and BICR18 proteins are the same as normal control in 8 tumors, the rest of other proteins in table V are not different from normal control in all ten tumors. Similarly, Iehle, C et al, 1999, J Steroid Biochem Mol Biol, 68: 189-195, teach that although the level of 5-alpha-reductase-1 is increased in prostate cancer tissue, the level of the isoform 5-alpha-reductase-2 is the same as that of normal prostate (abstract). Abbaszadegan, M R, et al, 1994, Cancer Res, 54: 4676-4679, teach that the level of multidrug resistance-associated protein (MRP) detected in malignant hematopoietic cells is similar to the level found in normal hematopoietic cells (p.4678, second column, last 6 lines of second paragraph).

Moreover, **a sample** as claimed encompasses any sample or tissue to which breast cancer cells have metastasized to. It is unpredictable that metastasized breast cancer cells still express the claimed sequences, because expression of a sequence could be lost during the progression toward metastasis. For example, Russo, V et al, 1995, Int J Cancer, 64: 216-221, teach that analysis of multiple metastatic lesions and primary breast tumors show that in some cases the MAGE gene expression is lost during metastasis, but in some other cases, in metastasis nodes derived from MAGE-negative primary tumors, MAGE gene expression is detected (abstract, and table II on page 220). Kibel, AS et al, 2000, J urol, 164(1): 192-6 teach that gene expression in the chromosomal region 12p12-13 is different in primary and metastatic prostate cancer cells, and that inactivation in the chromosome region 12p12-13 occurs prior to metastasis. Similarly, Dong et al, 2000, Cancer Research, 60: 3880-3883, teach that deletion of a region in the chromosome 13q21 is associated with aggressive prostate cancer, as compared to less aggressive

prostate cancer, such as primary prostate cancers that are not yet differentiated (abstract, and figure 1 on page 3882).

2. Claim 7 is also rejected under 112, first paragraph, for lack of enablement for **a polynucleotide analog of** SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379 or SEQ ID NO: 392 **, its derivative or allelic variant thereof.**

Even if SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379 and SEQ ID NO: 392 were differentially expressed in breast cancer tissues as compared to non-cancerous breast control tissues, one would not know how to make the claimed analogs, derivatives or allelic variant, such that they have the same function as the corresponding polynucleotide, nor one can predict that the claimed analogs, derivatives or allelic variant would be differentially expressed in breast cancer tissues as compared to non-cancerous breast control tissues.

One would not know how to make the claimed analogs, derivatives or allelic variant, such that they have the same function as the corresponding polynucleotide, in view of the unpredictability of protein chemistry, as taught by Bowie et al, Burgess et al, and Lazar et al, supra, such unpredictability applies as well to polynucleotides that encode the proteins.

Further, one cannot predict that the claimed analogs, derivatives or allelic variant would be differentially expressed in breast cancer tissues as compared to non-cancerous breast control tissues. It is well known in the art that variants of a sequence do not necessarily express at the same level as the corresponding wild type. For example, Schmid S et al, 2001 (J comparative Neurology, 430(2): 160-71), teach that the variants flip/flop of the gene GluR are expressed at higher levels in neurons in the auditory braistem, as compared to the wild type GluR-A and

GluR-B, and that neurons in the central nucleus of the inferior collicullus express high levels of GluR-B flip but only low levels of the other receptor subunits. Conner et al, 1996 (Mol Brain Res, 42: 1-17), teach that full length trkB is found the hippocampus in patients with Alzheimer's disease, but not in hippocampi of either normal age-matched individual or patients with Huntington's disease, and that truncated trkB is found in senile plaques in hippocampus and temporal lobe in both patients with Alzheimer's disease and Huntington's disease, but not in normal brains of aged-matched individuals (page 8, item 3.1.2).

MPEP 2164.03 teaches that "the amount of guidance or direction needed to enable the invention is inversely related to the amount of knowledge in the state of the art as well as the predictability of the art. In re Fisher, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970). The amount of guidance or direction refers to that information in the application, as originally filed, that teaches exactly how to make or use the invention. The more that is known in the prior art about the nature ot the invention, how to make, and how to use the invention, and the more predictable the art is, the less information needs to explicitly stated in the specification. In constrast, if little is known in the prior art about the nature of the invention and the art is unpredictable, the specification would need more detail as how to make and use the invention in order to be enabling."

Given the above unpredictability, and in view of the complex nature of the invention, a lack of sufficient disclosure in the specification, and little is known in the art concerning the claimed invention, there would be an undue quantity of experimentation required for one of skill in the art to practice the claimed invention, that is commensurate in scope of the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 7 is rejected under 35 U.S.C. 102(e) as being anticipated by Dai et al (US 7,171,311 B2, filed on 1/15/03).

Claim 7. (Currently Amended) A method for diagnosis of malignant neoplasia said method comprising:

amplifying a nucleic acid sequence in a sample of a patient and detecting at least four markers in the nucleic acid sequence characterized in that the four markers are selected from:

(a) polynucleotides comprising SEQ ID NO: 361, SEQ ID NO: 363, SEQ ID NO: 379, and SEQ ID NO: 392;

(b) a polynucleotide or polynucleotide analog which hybridizes under stringent conditions to a polynucleotide specified in (a) and encodes a polypeptide exhibiting the same biological function as specified for the respective sequence in Table 2 or 3

(c) a polynucleotide or polynucleotide analog the sequence of which deviates from the polynucleotide specified in (a) and (b) due to the generation of the genetic code encoding a polypeptide exhibiting the same biological function as specified for the respective sequence in Table 2 or 3

(d) a polynucleotide or polynucleotide analog which represents a specific fragment, derivative or allelic variation of a polynucleotide sequence specified in (a) to (c).

Dai et al teach marker sets correlated with breast cancer, useful for diagnosis of breast cancer (column 20, first paragraph), and subsets of at least 5 markers, for distinguishing tumor types, such as ER+ and ER- patients (column 20, second paragraph). Dai et al teach that the target polynucleotides could be expressed RNA or amplified RNA (column 122, lines 15-20). SEQ ID NO:361, SEQ ID NO: 363, SEQ ID NO: 379, and SEQ ID NO: 392, respectively, of the claimed invention are 86.4% similar to SEQ ID NO:492, from nucleotide 62 to nucleotide 1480 of SEQ ID NO: 361, and 100% similar to SEQ ID NO: 484, SEQ ID NO: 485, and SEQ ID NO: 714, taught by Dai et al (columns 26-29, table 1), as shown by MPSRCH sequence similarity search (MPSRCH search result, 2009, us-10.576.900.361.rni.result 2, pages 1-2, MPSRCH search result, 2009, us-10.576.900.363.rni.result 1, pages 1-2, MPSRCH search result, 2009, us-10.576.900.379.rni.result 1, pages 1-2, and MPSRCH search result, 2009, us-10.576.900.392.rni.result 3, pages 1-2).

The method taught by Dai et al is the same method as the claimed method for detecting a derivative of SEQ ID NO:361, SEQ ID NO: 363, SEQ ID NO: 379, and SEQ ID NO: 392. Further, the method taught by Dai et al would inherently detect SEQ ID NO:361, SEQ ID NO: 363, SEQ ID NO: 379, and SEQ ID NO: 392, because of the extensive homology between the claimed SEQ ID NO:361 and SEQ ID NO: 492 taught by the art, and because of 100% similarity between the claimed SEQ ID NO: 363, SEQ ID NO: 379, and SEQ ID NO: 392 and SEQ ID NO: 484, SEQ ID NO: 485, and SEQ ID NO: 714, respectively, taught by Dai et al.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MINH-TAM DAVIS whose telephone number is 571-272-0830. The examiner can normally be reached on 9:00 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LARRY HELMS can be reached on 571-272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MINH TAM DAVIS
April 30, 2009

/Larry R. Helms/

Supervisory Patent Examiner, Art Unit 1643

MPSRCH search result, 2009, us-10.576.900.361.rni.result 2, pages 1-2

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RESULT 2
US-10-342-887-492
; Sequence 492, Application US/10342887
; Patent No. 7171311
; GENERAL INFORMATION:
;  APPLICANT: Dai, Hongyue
;  APPLICANT:  He, Yudong
;  APPLICANT:  Linsley, Peter S.
;  APPLICANT:  Mao, Mao
;  APPLICANT:  Roberts, Christopher J.
;  APPLICANT:  Van 't Veer, Laura Johanna
;  APPLICANT:  Van de Vijver, Marc J.
;  APPLICANT:  Bernards, Rene
;  TITLE OF INVENTION: Diagnosis and Prognosis of Breast Cancer Patients
;  FILE REFERENCE: 9301-188-999
;  CURRENT APPLICATION NUMBER: US/10/342,887
;  CURRENT FILING DATE:  2003-01-15
;  PRIOR APPLICATION NUMBER: 60/298,918
;  PRIOR FILING DATE: 2001-06-18
;  PRIOR APPLICATION NUMBER: 60/380,710
;  PRIOR FILING DATE: 2002-05-14
;  PRIOR APPLICATION NUMBER: 10/172,118
;  PRIOR FILING DATE: 2002-06-14
;  NUMBER OF SEQ ID NOS: 2699
; SEQ ID NO 492
;   LENGTH: 1419
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-10-342-887-492

  Query Match             86.4%;  Score 1411;  DB 5;  Length 1419;
  Best Local Similarity   99.6%;  Pred. No. 1.5e-272;
  Matches 1414;  Conservative    0;  Mismatches    5;  Indels    0;  Gaps    0;

Qy          62 ATGACTACCTGCAGCCGCCAGTTCACCTCCTCCAGCTCCATGAAGGGCTCCTGCGGCATC 121
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db           1 ATGACTACCTGCAGCCGCCAGTTCACCTCCTCCAGCTCCATGAAGGGCTCCTGCGGCATC 60

Qy         122 GGGGGCGGCATCGGGGGCGGCTCCAGCCGCATCTCCTCCGTCCTGGCCGGAGGGTCCTGC 181
               ||||||||||||||||  ||||||||||||||||||||||||||||||||||||||||||
Db          61 GGGGGCGGCATCGGGGCGGGCTCCAGCCGCATCTCCTCCGTCCTGGCCGGAGGGTCCTGC 120

Qy         182 CGCGCCCCCAGCACCTACGGGGGCGGCCTGTCTGTCTCATCCTCCCGCTTCTCCTCTGGG 241
               |||||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||
Db         121 CGCGCCCCCAACACCTACGGGGGCGGCCTGTCTGTCTCATCCTCCCGCTTCTCCTCTGGG 180

Qy         242 GGAGCCTACGGGCTGGGGGGCGGCTATGGCGGTGGCTTCAGCAGCAGCAGCAGCAGCTTT 301
               |||||||| ||| ||||||||||||||||||||||||||||||||||||||||||||||||
Db         181 GGAGCCTATGGGTTGGGGGGCGGCTATGGCGGTGGCTTCAGCAGCAGCAGCAGCAGCTTT 240

Qy         302 GGTAGTGGCTTTGGGGGAGGATATGGTGGTGGCCTTGGTGCTGGCTTGGGTGGTGGCTTT 361
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         241 GGTAGTGGCTTTGGGGGAGGATATGGTGGTGGCCTTGGTGCTGGCTTGGGTGGTGGCTTT 300

Qy         362 GGTGGTGGCTTTGCTGGTGGTGATGGGCTTCTGGTGGGCAGTGAGAAGGTGACCATGCAG 421
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         301 GGTGGTGGCTTTGCTGGTGGTGATGGGCTTCTGGTGGGCAGTGAGAAGGTGACCATGCAG 360

Qy         422 AACCTCAATGACCGCCTGGCCTCCTACCTGGACAAGGTGCGTGCTCTGGAGGAGGCCAAC 481
               ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         361 AACCTCAATGACCGCCTGGCCTCCTACCTGGACAAGGTGCGTGCTCTGGAGGAGGCCAAC 420
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Qy        482 GCCGACCTGGAAGTGAAGATCCGTGACTGGTACCAGAGGCAGCGGCCTGCTGAGATCAAA 541
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        421 GCCGACCTGGAAGTGAAGATCCGTGACTGGTACCAGAGGCAGCGGCCTGCTGAGATCAAA 480

Qy        542 GACTACAGTCCCTACTTCAAGACCATTGAGGACCTGAGGAACAAGATTCTCACAGCCACA 601
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 GACTACAGTCCCTACTTCAAGACCATTGAGGACCTGAGGAACAAGATTCTCACAGCCACA 540

Qy        602 GTGGACAATGCCAATGTCCTTCTGCAGATTGACAATGCCCGTCTGGCCGCGGATGACTTC 661
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 GTGGACAATGCCAATGTCCTTCTGCAGATTGACAATGCCCGTCTGGCCGCGGATGACTTC 600

Qy        662 CGCACCAAGTATGAGACAGAGTTGAACCTGCGCATGAGTGTGGAAGCCGACATCAATGGC 721
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        601 CGCACCAAGTATGAGACAGAGTTGAACCTGCGCATGAGTGTGGAAGCCGACATCAATGGC 660

Qy        722 CTGCGCAGGGTGCTGGACGAACTGACCCTGGCCAGAGCTGACCTGGAGATGCAGATTGAG 781
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        661 CTGCGCAGGGTGCTGGACGAACTGACCCTGGCCAGAGCTGACCTGGAGATGCAGATTGAG 720

Qy        782 AGCCTGAAGGAGGAGCTGGCCTACCTGAAGAAGAACCACGAGGAGGAGATGAATGCCCTG 841
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        721 AGCCTGAAGGAGGAGCTGGCCTACCTGAAGAAGAACCACGAGGAGGAGATGAATGCCCTG 780

Qy        842 AGAGGCCAGGTGGGTGGAGATGTCAATGTGGAGATGGACGCTGCACCTGGCGTGGACCTG 901
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        781 AGAGGCCAGGTGGGTGGAGATGTCAATGTGGAGATGGACGCTGCACCTGGCGTGGACCTG 840

Qy        902 AGCCGCATTCTGAACGAGATGCGTGACCAGTATGAGAAGATGGCAGAGAAGAACCGCAAG 961
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        841 AGCCGCATTCTGAACGAGATGCGTGACCAGTATGAGAAGATGGCAGAGAAGAACCGCAAG 900

Qy        962 GATGCCGAGGAATGGTTCTTCACCAAGACAGAGGAGCTGAACCGCGAGGTGGCCACCAAC 1021
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        901 GATGCCGAGGAATGGTTCTTCACCAAGACAGAGGAGCTGAACCGCGAGGTGGCCACCAAC 960

Qy       1022 AGCGAGCTGGTGCAGAGCGGCAAGAGCGAGATCTCGGAGCTCCGGCGCACCATGCAGAAC 1081
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        961 AGCGAGCTGGTGCAGAGCGGCAAGAGCGAGATCTCGGAGCTCCGGCGCACCATGCAGAAC 1020

Qy       1082 CTGGAGATTGAGCTGCAGTCCCAGCTCAGCATGAAAGCATCCCTGGAGAACAGCCTGGAG 1141
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1021 CTGGAGATTGAGCTGCAGTCCCAGCTCAGCATGAAAGCATCCCTGGAGAACAGCCTGGAG 1080

Qy       1142 GAGACCAAAGGTCGCTACTGCATGCAGCTGGCCCAGATCCAGGAGATGATTGGCAGCGTG 1201
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1081 GAGACCAAAGGTCGCTACTGCATGCAGCTGGCCCAGATCCAGGAGATGATTGGCAGCGTG 1140

Qy       1202 GAGGAGCAGCTGGCCCAGCTCCGCTGCGAGATGGAGCAGCAGAACCAGGAGTACAAGATC 1261
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1141 GAGGAGCAGCTGGCCCAGCTCCGCTGCGAGATGGAGCAGCAGAACCAGGAGTACAAGATC 1200

Qy       1262 CTGCTGGACGTGAAGACGCGGCTGGAGCAGGAGATCGCCACCTACCGCCGCCTGCTGGAG 1321
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Db       1201 CTGCTGGACGTGAAGACGCGGCTGGAGCAGGAGATCGCCACCTACCGCCGCCTGCTGGAG 1260

Qy       1322 GGCGAGGACGCCCACCTCTCCTCCTCCCAGTTCTCCTCTGGATCGCAGTCATCCAGAGAT 1381
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1261 GGCGAGGACGCCCACCTCTCCTCCTCCCAGTTCTCCTCTGGATCGCAGTCATCCAGAGAT 1320

Qy       1382 GTGACCTCCTCCAGCCGCCAAATCCGCACCAAGGTCATGGATGTGCACGATGGCAAGGTG 1441
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1321 GTGACCTCCTCCAGCCGCCAAATCCGCACCAAGGTCATGGATGTGCACGATGGCAAGGTG 1380

Qy       1442 GTGTCCACCCACGAGCAGGTCCTTCGCACCAAGAACTGA 1480
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Db       1381 GTGTCCACCCACGAGCAGGTCCTTCGCACCAAGAACTGA 1419
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MPSRCH search result, 2009, us-10.576.900.363.rni.result 1, pages 1-2

```
RESULT 1
US-10-342-887-484
; Sequence 484, Application US/10342887
; Patent No. 7171311
; GENERAL INFORMATION:
;  APPLICANT: Dai, Hongyue
;  APPLICANT:  He, Yudong
;  APPLICANT:  Linsley, Peter S.
;  APPLICANT:  Mao, Mao
;  APPLICANT:  Roberts, Christopher J.
;  APPLICANT:  Van 't Veer, Laura Johanna
;  APPLICANT:  Van de Vijver, Marc J.
;  APPLICANT:  Bernards, Rene
;  TITLE OF INVENTION: Diagnosis and Prognosis of Breast Cancer Patients
;  FILE REFERENCE: 9301-188-999
;  CURRENT APPLICATION NUMBER: US/10/342,887
;  CURRENT FILING DATE:  2003-01-15
;  PRIOR APPLICATION NUMBER: 60/298,918
;  PRIOR FILING DATE: 2001-06-18
;  PRIOR APPLICATION NUMBER: 60/380,710
;  PRIOR FILING DATE: 2002-05-14
;  PRIOR APPLICATION NUMBER: 10/172,118
;  PRIOR FILING DATE: 2002-06-14
;  NUMBER OF SEQ ID NOS: 2699
; SEQ ID NO 484
;   LENGTH: 1512
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-10-342-887-484

  Query Match             100.0%;  Score 1512;  DB 5;  Length 1512;
  Best Local Similarity   100.0%;  Pred. No. 2.9e-300;
  Matches 1512;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 CTCCTCTCCAGCCCTTCTCCTGTGTGCCTGCCTCCTGCCGCCGCCACCATGACCACCTCC 60
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Db          1 CTCCTCTCCAGCCCTTCTCCTGTGTGCCTGCCTCCTGCCGCCGCCACCATGACCACCTCC 60

Qy         61 ATCCGCCAGTTCACCTCCTCCAGCTCCATCAAGGGCTCCTCCGGCCTGGGGGGCGGCTCG 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 ATCCGCCAGTTCACCTCCTCCAGCTCCATCAAGGGCTCCTCCGGCCTGGGGGGCGGCTCG 120

Qy        121 TCCCGCACCTCCTGCCGGCTGTCTGGCGGCCTGGGTGCCGGCTCCTGCAGGCTGGGATCT 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 TCCCGCACCTCCTGCCGGCTGTCTGGCGGCCTGGGTGCCGGCTCCTGCAGGCTGGGATCT 180

Qy        181 GCTGGCGGCCTGGGCAGCACCCTCGGGGGGTAGCAGCTACTCCAGCTGCTACAGCTTTGGC 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        181 GCTGGCGGCCTGGGCAGCACCCTCGGGGGGTAGCAGCTACTCCAGCTGCTACAGCTTTGGC 240

Qy        241 TCTGGTGGTGGCTATGGCAGCAGCTTTGGGGGGTGTTGATGGGCTGCTGGCTGGAGGTGAG 300
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        241 TCTGGTGGTGGCTATGGCAGCAGCTTTGGGGGGTGTTGATGGGCTGCTGGCTGGAGGTGAG 300

Qy        301 AAGGCCACCATGCAGAACCTCAATGACCGCCTGGCCTCCTACCTGGACAAGGTGCGTGCC 360
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Db        301 AAGGCCACCATGCAGAACCTCAATGACCGCCTGGCCTCCTACCTGGACAAGGTGCGTGCC 360

Qy        361 CTGGAGGAGGCCAACACTGAGCTGGAGGTGAAGATCCGTGACTGGTACCAGAGGCAGGCC 420
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        361 CTGGAGGAGGCCAACACTGAGCTGGAGGTGAAGATCCGTGACTGGTACCAGAGGCAGGCC 420

Qy        421 CCGGGGCCCGCCCGTGACTACAGCCAGTACTACAGGACAATTGAGGAGCTGCAGAACAAG 480
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Db        421 CCGGGGCCCGCCCGTGACTACAGCCAGTACTACAGGACAATTGAGGAGCTGCAGAACAAG 480

Qy        481 ATCCTCACAGCCACCGTGGACAATGCCAACATCCTGCTACAGATTGACAATGCCCGTCTG 540
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        481 ATCCTCACAGCCACCGTGGACAATGCCAACATCCTGCTACAGATTGACAATGCCCGTCTG 540

Qy        541 GCTGCTGATGACTTCCGCACCAAGTTTGAGACAGAGCAGGCCCTGCGCCTGAGTGTGGAG 600
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        541 GCTGCTGATGACTTCCGCACCAAGTTTGAGACAGAGCAGGCCCTGCGCCTGAGTGTGGAG 600

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Db        601 GCCGACATCAATGGCCTGCGCAGGGTGCTGGATGAGCTGACCCTGGCCAGAGCCGACCTG 660

Qy        661 GAGATGCAGATTGAGAACCTCAAGGAGGAGCTGGCCTACCTGAAGAAGAACCACGAGGAG 720
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        661 GAGATGCAGATTGAGAACCTCAAGGAGGAGCTGGCCTACCTGAAGAAGAACCACGAGGAG 720

Qy        721 GAGATGAACGCCCTGCGAGGCCAGGTGGGTGGTGAGATCAATGTGGAGATGGACGCTGCC 780
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Db        721 GAGATGAACGCCCTGCGAGGCCAGGTGGGTGGTGAGATCAATGTGGAGATGGACGCTGCC 780

Qy        781 CCAGGCGTGGACCTGAGCCGCATCCTCAACGAGATGCGTGACCAGTATGAGAAGATGGCA 840
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Db        781 CCAGGCGTGGACCTGAGCCGCATCCTCAACGAGATGCGTGACCAGTATGAGAAGATGGCA 840

Qy        841 GAGAAGAACCGCAAGGATGCCGAGGATTGGTTCTTCAGCAAGACAGAGGAACTGAACCGC 900
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Db        841 GAGAAGAACCGCAAGGATGCCGAGGATTGGTTCTTCAGCAAGACAGAGGAACTGAACCGC 900

Qy        901 GAGGTGGCCACCAACAGTGAGCTGGTGCAGAGTGGCAAGAGTGAGATCTCGGAGCTCCGG 960
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        901 GAGGTGGCCACCAACAGTGAGCTGGTGCAGAGTGGCAAGAGTGAGATCTCGGAGCTCCGG 960

Qy        961 CGCACCATGCAGGCCTTGGAGATAGAGCTGCAGTCCCAGCTCAGCATGAAAGCATCCCTG 1020
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        961 CGCACCATGCAGGCCTTGGAGATAGAGCTGCAGTCCCAGCTCAGCATGAAAGCATCCCTG 1020

Qy       1021 GAGGGCAACCTGGCGGAGACAGAGAACCGCTACTGCGTGCAGCTGTCCCAGATCCAGGGG 1080
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1021 GAGGGCAACCTGGCGGAGACAGAGAACCGCTACTGCGTGCAGCTGTCCCAGATCCAGGGG 1080

Qy       1081 CTGATTGGCAGCGTGGAGGAGCAGCTGGCCCAGCTTCGCTGCGAGATGGAGCAGCAGAAC 1140
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1081 CTGATTGGCAGCGTGGAGGAGCAGCTGGCCCAGCTTCGCTGCGAGATGGAGCAGCAGAAC 1140

Qy       1141 CAGGAATACAAAATCCTGCTGGATGTGAAGACGCGGCTGGAGCAGGAGATTGCCACCTAC 1200
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1141 CAGGAATACAAAATCCTGCTGGATGTGAAGACGCGGCTGGAGCAGGAGATTGCCACCTAC 1200

Qy       1201 CGCCGCCTGCTGGAGGGAGAGGATGCCCACCTGACTCAGTACAAGAAAGAACCGGTGACC 1260
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1201 CGCCGCCTGCTGGAGGGAGAGGATGCCCACCTGACTCAGTACAAGAAAGAACCGGTGACC 1260

Qy       1261 ACCCGTCAGGTGCGTACCATTGTGGAAGAGGTCCAGGATGGCAAGGTCATCTCCTCCCGC 1320
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Db       1261 ACCCGTCAGGTGCGTACCATTGTGGAAGAGGTCCAGGATGGCAAGGTCATCTCCTCCCGC 1320

Qy       1321 GAGCAGGTCCACCAGACCACCCGCTGAGGACTCAGCTACCCCGGCCGGCCACCCAGGAGG 1380
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1321 GAGCAGGTCCACCAGACCACCCGCTGAGGACTCAGCTACCCCGGCCGGCCACCCAGGAGG 1380

Qy       1381 CAGGGAGCAGCCGCCCCATCTGCCCCACAGTCTCCGGCCTCTCCAGCCTCAGCCCCCTGC 1440
                ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1381 CAGGGAGCAGCCGCCCCATCTGCCCCACAGTCTCCGGCCTCTCCAGCCTCAGCCCCCTGC 1440
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Qy       1441 TTCAGTCCCTTCCCCATGCTTCCTTGCCTGATGACAATAAAGCTTGTTGACTCAGCTAAA 1500
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Db       1441 TTCAGTCCCTTCCCCATGCTTCCTTGCCTGATGACAATAAAGCTTGTTGACTCAGCTAAA 1500

Qy       1501 AAAAAAAAAAAA 1512
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Db       1501 AAAAAAAAAAAA 1512
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MPSRCH search result, 2009, us-10.576.900.379.rni.result 1, pages 1-2

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RESULT 1

US-10-342-887-485
; Sequence 485, Application US/10342887
; Patent No. 7171311
; GENERAL INFORMATION:
;  APPLICANT: Dai, Hongyue
;  APPLICANT:  He, Yudong
;  APPLICANT:  Linsley, Peter S.
;  APPLICANT:  Mao, Mao
;  APPLICANT:  Roberts, Christopher J.
;  APPLICANT:  Van 't Veer, Laura Johanna
;  APPLICANT:  Van de Vijver, Marc J.
;  APPLICANT:  Bernards, Rene
;  TITLE OF INVENTION: Diagnosis and Prognosis of Breast Cancer Patients
;  FILE REFERENCE: 9301-188-999
;  CURRENT APPLICATION NUMBER: US/10/342,887
;  CURRENT FILING DATE:  2003-01-15
;  PRIOR APPLICATION NUMBER: 60/298,918
;  PRIOR FILING DATE: 2001-06-18
;  PRIOR APPLICATION NUMBER: 60/380,710
;  PRIOR FILING DATE: 2002-05-14
;  PRIOR APPLICATION NUMBER: 10/172,118
;  PRIOR FILING DATE: 2002-06-14
;  NUMBER OF SEQ ID NOS: 2699
; SEQ ID NO 485
;   LENGTH: 2529
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-10-342-887-485

  Query Match             100.0%;  Score 2301;  DB 5;  Length 2529;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches 2301;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 TCGACAGCTCTCTCGCCCAGCCCAGTTCTGGAAGGGATAAAAAGGGGGCATCACCGTTCC 60
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Db        229 TCGACAGCTCTCTCGCCCAGCCCAGTTCTGGAAGGGATAAAAAGGGGGCATCACCGTTCC 288

Qy         61 TGGGTAACAGAGCCACCTTCTGCGTCCTGCTGAGCTCTGTTCTCTCCAGCACCTCCCAAC 120
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Db        289 TGGGTAACAGAGCCACCTTCTGCGTCCTGCTGAGCTCTGTTCTCTCCAGCACCTCCCAAC 348

Qy        121 CCACTAGTGCCTGGTTCTCTTGCTCCACCAGGAACAAGCCACCATGTCTCGCCAGTCAAG 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        349 CCACTAGTGCCTGGTTCTCTTGCTCCACCAGGAACAAGCCACCATGTCTCGCCAGTCAAG 408

Qy        181 TGTGTCCTTCCGGAGCGGGGGCAGTCGTAGCTTCAGCACCGCCTCTGCCATCACCCCGTC 240
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        409 TGTGTCCTTCCGGAGCGGGGGCAGTCGTAGCTTCAGCACCGCCTCTGCCATCACCCCGTC 468

Qy        241 TGTCTCCCGCACCAGCTTCACCTCCGTGTCCCGGTCCGGGGGGTGGCGGTGGTGGTGGCTT 300
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Db        469 TGTCTCCCGCACCAGCTTCACCTCCGTGTCCCGGTCCGGGGGGTGGCGGTGGTGGTGGCTT 528
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Qy        301 CGGCAGGGTCAGCCTTGCGGGTGCTTGTGGAGTGGGTGGCTATGGCAGCCGGAGCCTCTA 360
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        529 CGGCAGGGTCAGCCTTGCGGGTGCTTGTGGAGTGGGTGGCTATGGCAGCCGGAGCCTCTA 588

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Db        589 CAACCTGGGGGGCTCCAAGAGGATATCCATCAGCACTAGAGGAGGCAGCTTCAGGAACCG 648

Qy        421 GTTTGGTGCTGGTGCTGGAGGCGGCTATGGCTTTGGAGGTGGTGCCGGTAGTGGATTTGG 480
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        649 GTTTGGTGCTGGTGCTGGAGGCGGCTATGGCTTTGGAGGTGGTGCCGGTAGTGGATTTGG 708

Qy        481 TTTCGGCGGTGGAGCTGGTGGTGGCTTTGGGCTCGGTGGCGGAGCTGGCTTTGGAGGTGG 540
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        709 TTTCGGCGGTGGAGCTGGTGGTGGCTTTGGGCTCGGTGGCGGAGCTGGCTTTGGAGGTGG 768

Qy        541 CTTCGGTGGCCCTGGCTTTCCTGTCTGCCCTCCTGGAGGTATCCAAGAGGTCACTGTCAA 600
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        769 CTTCGGTGGCCCTGGCTTTCCTGTCTGCCCTCCTGGAGGTATCCAAGAGGTCACTGTCAA 828

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Db        829 CCAGAGTCTCCTGACTCCCCTCAACCTGCAAATCGACCCCAGCATCCAGAGGGTGAGGAC 888

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Db        889 CGAGGAGCGCGAGCAGATCAAGACCCTCAACAATAAGTTTGCCTCCTTCATCGACAAGGT 948

Qy        721 GCGGTTCCTGGAGCAGCAGAACAAGGTTCTGGACACCAAGTGGACCCTGCTGCAGGAGCA 780
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Db        949 GCGGTTCCTGGAGCAGCAGAACAAGGTTCTGGACACCAAGTGGACCCTGCTGCAGGAGCA 1008

Qy        781 GGGCACCAAGACTGTGAGGCAGAACCTGGAGCCGTTGTTCGAGCAGTACATCAACAACCT 840
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1009 GGGCACCAAGACTGTGAGGCAGAACCTGGAGCCGTTGTTCGAGCAGTACATCAACAACCT 1068

Qy        841 CAGGAGGCAGCTGGACAGCATCGTGGGGGAACGGGGCCGCCTGGACTCAGAGCTGAGAAA 900
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Db       1069 CAGGAGGCAGCTGGACAGCATCGTGGGGGAACGGGGCCGCCTGGACTCAGAGCTGAGAAA 1128

Qy        901 CATGCAGGACCTGGTGGAAGACTTCAAGAACAAGTATGAGGATGAAATCAACAAGCGTAC 960
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Db       1129 CATGCAGGACCTGGTGGAAGACTTCAAGAACAAGTATGAGGATGAAATCAACAAGCGTAC 1188

Qy        961 CACTGCTGAGAATGAGTTTGTGATGCTGAAGAAGGATGTAGATGCTGCCTACATGAACAA 1020
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Db       1189 CACTGCTGAGAATGAGTTTGTGATGCTGAAGAAGGATGTAGATGCTGCCTACATGAACAA 1248

Qy       1021 GGTGGAGCTGGAGGCCAAGGTTGATGCACTGATGGATGAGATTAACTTCATGAAGATGTT 1080
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Db       1249 GGTGGAGCTGGAGGCCAAGGTTGATGCACTGATGGATGAGATTAACTTCATGAAGATGTT 1308

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Db       1309 CTTTGATGCGGAGCTGTCCCAGATGCAGACGCATGTCTCTGACACCTCAGTGGTCCTCTC 1368

Qy       1141 CATGGACAACAACCGCAACCTGGACCTGGATAGCATCATCGCTGAGGTCAAGGCCCAGTA 1200
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1369 CATGGACAACAACCGCAACCTGGACCTGGATAGCATCATCGCTGAGGTCAAGGCCCAGTA 1428

Qy       1201 TGAGGAGATTGCCAACCGCAGCCGGACAGAAGCCGAGTCCTGGTATCAGACCAAGTATGA 1260
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1429 TGAGGAGATTGCCAACCGCAGCCGGACAGAAGCCGAGTCCTGGTATCAGACCAAGTATGA 1488

Qy       1261 GGAGCTGCAGCAGACAGCTGGCCGGCATGGCGATGACCTCCGCAACACCAAGCATGAGAT 1320
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Db       1489 GGAGCTGCAGCAGACAGCTGGCCGGCATGGCGATGACCTCCGCAACACCAAGCATGAGAT 1548

Qy       1321 CACAGAGATGAACCGGATGATCCAGAGGCTGAGAGCCGAGATTGACAATGTCAAGAAACA 1380
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1549 CACAGAGATGAACCGGATGATCCAGAGGCTGAGAGCCGAGATTGACAATGTCAAGAAACA 1608

Qy       1381 GTGCGCCAATCTGCAGAACGCCATTGCGGATGCCGAGCAGCGTGGGGAGCTGGCCCTCAA 1440
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1609 GTGCGCCAATCTGCAGAACGCCATTGCGGATGCCGAGCAGCGTGGGGAGCTGGCCCTCAA 1668

Qy       1441 GGATGCCAGGAACAAGCTGGCCGAGCTGGAGGAGGCCCTGCAGAAGGCCAAGCAGGACAT 1500
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1669 GGATGCCAGGAACAAGCTGGCCGAGCTGGAGGAGGCCCTGCAGAAGGCCAAGCAGGACAT 1728

Qy       1501 GGCCCGGCTGCTGCGTGAGTACCAGGAGCTCATGAACACCAAGCTGGCCCTGGACGTGGA 1560
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1729 GGCCCGGCTGCTGCGTGAGTACCAGGAGCTCATGAACACCAAGCTGGCCCTGGACGTGGA 1788

Qy       1561 GATCGCCACTTACCGCAAGCTGCTGGAGGGCGAGGAATGCAGACTCAGTGGAGAAGGAGT 1620
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1789 GATCGCCACTTACCGCAAGCTGCTGGAGGGCGAGGAATGCAGACTCAGTGGAGAAGGAGT 1848

Qy       1621 TGGACCAGTCAACATCTCTGTTGTCACAAGCAGTGTTTCCTCTGGATATGGCAGTGGCAG 1680
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1849 TGGACCAGTCAACATCTCTGTTGTCACAAGCAGTGTTTCCTCTGGATATGGCAGTGGCAG 1908

Qy       1681 TGGCTATGGCGGTGGCCTCGGTGGAGGTCTTGGCGGCGGCCTCGGTGGAGGTCTTGCCGG 1740
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Db       1909 TGGCTATGGCGGTGGCCTCGGTGGAGGTCTTGGCGGCGGCCTCGGTGGAGGTCTTGCCGG 1968

Qy       1741 AGGTAGCAGTGGAAGCTACTACTCCAGCAGCAGTGGGGGTGTCGGCCTAGGTGGTGGGCT 1800
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1969 AGGTAGCAGTGGAAGCTACTACTCCAGCAGCAGTGGGGGTGTCGGCCTAGGTGGTGGGCT 2028

Qy       1801 CAGTGTGGGGGGCTCTGGCTTCAGTGCAAGCAGTGGCCGAGGGCTGGGGGTGGGCTTTGG 1860
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2029 CAGTGTGGGGGGCTCTGGCTTCAGTGCAAGCAGTGGCCGAGGGCTGGGGGTGGGCTTTGG 2088

Qy       1861 CAGTGGCGGGGGTAGCAGCTCCAGCGTCAAATTTGTCTCCACCACCTCCTCCTCCCGGAA 1920
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2089 CAGTGGCGGGGGTAGCAGCTCCAGCGTCAAATTTGTCTCCACCACCTCCTCCTCCCGGAA 2148

Qy       1921 GAGCTTCAAGAGCTAAGAACCTGCTGCAAGTCACTGCCTTCCAAGTGCAGCAACCCAGCC 1980
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2149 GAGCTTCAAGAGCTAAGAACCTGCTGCAAGTCACTGCCTTCCAAGTGCAGCAACCCAGCC 2208

Qy       1981 CATGGAGATTGCCTCTTCTAGGCAGTTGCTCAAGCCATGTTTTATCCTTTTCTGGAGAGT 2040
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2209 CATGGAGATTGCCTCTTCTAGGCAGTTGCTCAAGCCATGTTTTATCCTTTTCTGGAGAGT 2268

Qy       2041 AGTCTAGACCAAGCCAATTGCAGAACCACATTCTTTGGTTCCCAGGAGAGCCCCATTCCC 2100
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2269 AGTCTAGACCAAGCCAATTGCAGAACCACATTCTTTGGTTCCCAGGAGAGCCCCATTCCC 2328

Qy       2101 AGCCCCTGGTCTCCCGTGCCGCAGTTCTATATTCTGCTTCAAATCAGCCTTCAGGTTTCC 2160
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy       2161 CACAGCATGGCCCCTGCTGACACGAGAACCCAAAGTTTTCCCAAATCTAAATCATCAAAA 2220
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Db       2389 CACAGCATGGCCCCTGCTGACACGAGAACCCAAAGTTTTCCCAAATCTAAATCATCAAAA 2448

Qy       2221 CAGAATCCCCACCCCAATCCCAAATTTTGTTTTGGTTCTAACTACCTCCAGAATGTGTTC 2280
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Qy       2281 AATAAAATGCTTTTATAATAT 2301
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Db       2509 AATAAAATGCTTTTATAATAT 2529
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MPSRCH search result, 2009, us-10.576.900.392.rni.result 3, pages 1-2

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RESULT 3
US-10-342-887-714
; Sequence 714, Application US/10342887
; Patent No. 7171311
; GENERAL INFORMATION:
;  APPLICANT: Dai, Hongyue
;  APPLICANT:  He, Yudong
;  APPLICANT:  Linsley, Peter S.
;  APPLICANT:  Mao, Mao
;  APPLICANT:  Roberts, Christopher J.
;  APPLICANT:  Van 't Veer, Laura Johanna
;  APPLICANT:  Van de Vijver, Marc J.
;  APPLICANT:  Bernards, Rene
;  TITLE OF INVENTION: Diagnosis and Prognosis of Breast Cancer Patients
;  FILE REFERENCE: 9301-188-999
;  CURRENT APPLICATION NUMBER: US/10/342,887
;  CURRENT FILING DATE:  2003-01-15
;  PRIOR APPLICATION NUMBER: 60/298,918
;  PRIOR FILING DATE: 2001-06-18
;  PRIOR APPLICATION NUMBER: 60/380,710
;  PRIOR FILING DATE: 2002-05-14
;  PRIOR APPLICATION NUMBER: 10/172,118
;  PRIOR FILING DATE: 2002-06-14
;  NUMBER OF SEQ ID NOS: 2699
; SEQ ID NO 714
;   LENGTH: 1283
;   TYPE: DNA
;   ORGANISM: Homo sapiens
US-10-342-887-714

  Query Match             100.0%;  Score 1283;  DB 5;  Length 1283;
  Best Local Similarity   100.0%;  Pred. No. 0;
  Matches 1283;  Conservative    0;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          1 CTCTCTGCTCCTCCTGTTCGACAGTCAGCCGCATCTTCTTTTGCGTCGCCAGCCGAGCCA 60
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Db          1 CTCTCTGCTCCTCCTGTTCGACAGTCAGCCGCATCTTCTTTTGCGTCGCCAGCCGAGCCA 60

Qy         61 CATCGCTCAGACACCATGGGGAAGGTGAAGGTCGGAGTCAACGGATTTGGTCGTATTGGG 120
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db         61 CATCGCTCAGACACCATGGGGAAGGTGAAGGTCGGAGTCAACGGATTTGGTCGTATTGGG 120

Qy        121 CGCCTGGTCACCAGGGCTGCTTTTAACTCTGGTAAAGTGGATATTGTTGCCATCAATGAC 180
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db        121 CGCCTGGTCACCAGGGCTGCTTTTAACTCTGGTAAAGTGGATATTGTTGCCATCAATGAC 180

Qy        181 CCCTTCATTGACCTCAACTACATGGTTTACATGTTCCAATATGATTCCACCCATGGCAAA 240
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Qy        241 TTCCATGGCACCGTCAAGGCTGAGAACGGGAAGCTTGTCATCAATGGAAATCCCATCACC 300
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Db        301 ATCTTCCAGGAGCGAGATCCCTCCAAAATCAAGTGGGGCGATGCTGGCGCTGAGTACGTC 360

Qy        361 GTGGAGTCCACTGGCGTCTTCACCACCATGGAGAAGGCTGGGGCTCATTTGCAGGGGGGA 420
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Db        361 GTGGAGTCCACTGGCGTCTTCACCACCATGGAGAAGGCTGGGGCTCATTTGCAGGGGGGA 420

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Db        421 GCCAAAAGGGTCATCATCTCTGCCCCCTCTGCTGATGCCCCCATGTTCGTCATGGGTGTG 480

Qy        481 AACCATGAGAAGTATGACAACAGCCTCAAGATCATCAGCAATGCCTCCTGCACCACCAAC 540
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Qy        541 TGCTTAGCACCCCTGGCCAAGGTCATCCATGACAACTTTGGTATCGTGGAAGGACTCATG 600
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Db        541 TGCTTAGCACCCCTGGCCAAGGTCATCCATGACAACTTTGGTATCGTGGAAGGACTCATG 600

Qy        601 ACCACAGTCCATGCCATCACTGCCACCCAGAAGACTGTGGATGGCCCCTCCGGGAAACTG 660
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Db        661 TGGCGTGATGGCCGCGGGGCTCTCCAGAACATCATCCCTGCCTCTACTGGCGCTGCCAAG 720

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Qy        781 CCCACTGCCAACGTGTCAGTGGTGGACCTGACCTGCCGTCTAGAAAAACCTGCCAAATAT 840
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Db        781 CCCACTGCCAACGTGTCAGTGGTGGACCTGACCTGCCGTCTAGAAAAACCTGCCAAATAT 840

Qy        841 GATGACATCAAGAAGGTGGTGAAGCAGGCGTCGGAGGGCCCCCTCAAGGGCATCCTGGGC 900
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Db        841 GATGACATCAAGAAGGTGGTGAAGCAGGCGTCGGAGGGCCCCCTCAAGGGCATCCTGGGC 900

Qy        901 TACACTGAGCACCAGGTGGTCTCCTCTGACTTCAACAGCGACACCCACTCCTCCACCTTT 960
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Qy        961 GACGCTGGGGCTGGCATTGCCCTCAACGACCACTTTGTCAAGCTCATTTCCTGGTATGAC 1020
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Db        961 GACGCTGGGGCTGGCATTGCCCTCAACGACCACTTTGTCAAGCTCATTTCCTGGTATGAC 1020

Qy       1021 AACGAATTTGGCTACAGCAACAGGGTGGTGGACCTCATGGCCCACATGGCCTCCAAGGAG 1080
              ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       1021 AACGAATTTGGCTACAGCAACAGGGTGGTGGACCTCATGGCCCACATGGCCTCCAAGGAG 1080

Qy       1081 TAAGACCCCTGGACCACCAGCCCCAGCAAGAGCACAAGAGGAAGAGAGAGACCCTCACTG 1140
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Db       1081 TAAGACCCCTGGACCACCAGCCCCAGCAAGAGCACAAGAGGAAGAGAGAGACCCTCACTG 1140

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Db       1201 CCATGTAGACCCCTTGAAGAGGGGAGGGGCCTAGGGAGCCGCACCTTGTCATGTACCATC 1260

Qy       1261 AATAAAGTACCCTGTGCTCAACC 1283
              |||||||||||||||||||||||
Db       1261 AATAAAGTACCCTGTGCTCAACC 1283
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